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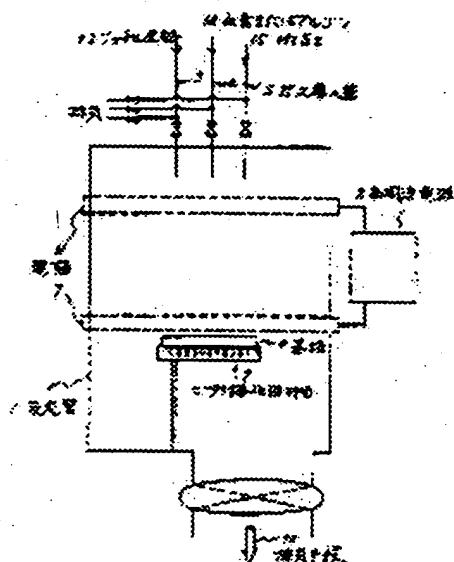
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## (54) MANUFACTURE OF COMPOUND THIN FILM OF GROUP II AND VI ELEMENTS

### (57)Abstract:

**PURPOSE:** To obtain a thin film of high quality at lower temperature than a conventional one at a high growing velocity thereby to be able to largely reduce a growing time by a gas source ALE method by using one or more types of H<sub>2</sub>S<sub>2</sub>, H<sub>2</sub>S<sub>3</sub>, H<sub>2</sub>S<sub>4</sub> as compound gas containing group VI element.

**CONSTITUTION:** When one or more types of compound gas containing group II element and one or more types of compound gas containing group VI element are simultaneously or alternately introduced onto a substrate to form a thin compound film made of the group II and VI elements, one or more of H<sub>2</sub>S<sub>2</sub>, H<sub>2</sub>S<sub>3</sub>, H<sub>2</sub>S<sub>4</sub> are used as compound gas containing group VI element. For example, zinc diethyl 13 is used as the group II source, H<sub>2</sub>S<sub>2</sub> 15 is used as group VI source, and a ZnS film is formed by a gas source ALE method on a crystalline substrate 9 of GaAs or Si or an amorphous substrate made of glass. Since H<sub>2</sub>S<sub>2</sub>, H<sub>2</sub>S<sub>3</sub>, H<sub>2</sub>S<sub>4</sub> called 'hydrogen polysulfide' feasibly radiate sulfur by heating or light irradiating, they are used as sulfur supply gas source to obtain a thin film of high quality at lower temperature than a conventional one at a high growing velocity.



### LEGAL STATUS

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